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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/824,844	04/02/2001	Sailaja S.K. Attili	CSCO-007/92821	1164

26392 7590 12/28/2004

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ARLINGTON, VA 22202

EXAMINER

STRANGE, AARON N

ART UNIT	PAPER NUMBER
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2153

DATE MAILED: 12/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n No.

09/824,844

Applicant(s)

ATTILI ET AL.

Examiner

Aaron Strange

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 September 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 April 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. All of the objections raised in the first office action have been overcome by virtue of the amendment. Applicant's assistance is requested in identifying any additional typographical errors that may be present in the claims.

Claim Rejections - 35 USC § 112

2. All of the rejections under 35 USC 112 2nd paragraph presented in the first office action have been overcome by virtue of the amendment, and are hereby withdrawn.

Response to Amendment

3. The declaration and affidavit filed on 9/14/2004 under 37 CFR 1.131 have been considered but are ineffective to overcome the Barrett reference (US 2003/0135644).
4. It appears that applicant intends to show invention of the claimed subject matter prior to the Jan. 24, 2001 date established by US Patent Application Publication 2003/0135644, to Mark A Barrett, by showing conception of the invention prior to Jan. 24, 2001 coupled with due diligence from prior to Jan. 24, 2001 to the filing date of the present application, April 2, 2001.

I. Formalities

5. Regarding the Affidavit filed by Srinthar Aswathnarayan, no statement is included which acknowledges that willful false statements and the like are punishable by fine or imprisonment, or both under 18 USC 1001 and may jeopardize the validity of the application or any patent issuing thereon. Additionally, no statement appears which states that all statements made of the declarant's own knowledge are true and that all statements made on information and belief are believed to be true. (See MPEP 715.04, II).

II. Conception

6. The evidence submitted is insufficient to establish a conception of the invention prior to the effective date of the Barrett reference. While conception is the mental part of the inventive act, it must be capable of proof, such as by demonstrative evidence or by a complete disclosure to another. Conception is more than a vague idea of how to solve a problem. The requisite means themselves and their interaction must also be comprehended. See *Mergenthaler v. Scudder*, 1897 C.D. 724, 81 O.G. 1417 (D.C. Cir. 1897).

7. The affidavit or declaration and exhibits must clearly explain which facts or data Applicant is relying on to show completion of his or her invention prior to the particular date. Vague and general statements in broad terms about what exhibits describe along with a general assertion that the exhibits describe a reduction to practice "amounts to

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essentially a mere pleading, unsupported by proof or a showing of facts", and, thus, does not satisfy the requirements of 37 CFR 1.131(b). Applicant must give a clear explanation of the exhibits pointing out exactly what facts are established and relied upon by applicant. (See MPEP 715.07, I).

8. In paragraphs 2 and 3 of the declaration/affidavit, Applicant cites exhibit A to provide evidence of conception. While exhibit A contains the abstract of the present application as filed, which provides support for the independent claims of the present application, Applicant has failed to explain the specific parts of the exhibit that are intended to show evidence of conception of the claimed subject matter prior to Jan 24, 2001.

9. Regarding exhibit A, the description of the document is insufficient. The date of the document is unknown, but it appears to have been generated on or after July 20, 2004, since the document is labeled as having been modified on that date. No explanation is given regarding what has been changed in the document between Jan 24, 2001 and July 20, 2004. The source and relevance of the document should be explained as it relates to the claimed subject matter.

10. Further regarding exhibit A, no explanation is given regarding what it meant when the application was "assigned" to the attorney of record on Jan 16, 2001. If assignment

is intended to support conception, further explanation is required to define the significance of this action.

11. For at least the reasons cited above, the affidavit and declaration are inadequate to establish conception prior to January 24, 2001.

III. Diligence

12. In determining the sufficiency of a 37 CFR 1.131 declaration/affidavit, diligence need not be considered unless conception of the invention prior to the effective date is clearly established, since diligence comes into question only after prior conception is established. (See MPEP 715.07(a)).

13. However, in the interest of compact prosecution, the Examiner notes the following deficiencies. It should be noted that these remarks are designed to assist the Applicant and should not necessarily be considered comprehensive.

14. In paragraphs 3-5 of the declaration/affidavit, Applicant appears to cite exhibits B and C to provide evidence of diligence from a date prior to the date of the Barrett reference, Jan 24, 2001 to a constructive reduction to practice coinciding with the filing of the present application on April 2, 2001. However, no statement of diligence is provided. Applicant must provide an explanation of how the exhibits show diligence as well as explanations for undocumented periods.

15. With regard to exhibits B and C, the following inconsistencies are noted:
- a. The apparent title of the application being discussed "Providing Different QOS to Layer-3 Datagrams When transported on Tunnels", which appears in the section labeled "Re:" of both exhibits B and C is not consistent with the title, disclosed subject matter, or claimed subject matter of the present application.
 - b. The inventor(s) listed in the section labeled "Re:" of exhibit B differs from the inventor(s) listed in the section labeled "Re:" of exhibit C.

No explanation is provided regarding these inconsistencies, such as why the inventorship changed between March 12, 2001 and March 28, 2001, or why the application being discussed in the exhibits appears to refer to different subject matter than the present application.

16. With further regard to exhibits B and C, it is unclear what the exhibits are. They appear to be letters, but the statement "Via Email Only" appears in both documents. It is unclear if these documents are emails or traditional letters.

17. Further regarding the evidence of diligence, Applicant has failed to provide an explanation for the undocumented periods from just prior to the date of the Barrett reference, Jan. 24, 2001, to the date of exhibit B, March 12, 2001, and the period from the date of exhibit B to the date of exhibit C, March 28, 2001.

18. If Applicant intends to rely on diligence of the attorney of record, in preparing and filing the present application, a statement from the attorney indicating how the attorney exercised reasonable diligence in preparing and filing the application must be submitted. Emphasis should be placed on explaining the delay between the date the application was "assigned" in exhibit A, Jan 16, 2001, and the date when a first draft of the application was completed, March 12, 2001.

19. Accordingly, neither conception prior to Jan 24, 2001 nor diligence for the critical period has been established.

Claim Rejections - 35 USC § 103

20. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

21. Claims 1-3, 5-19, 21-28, 30-43, and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barrett (2003/0135644) in view of Wang et al. (US 6,538,997).

22. With regard to claims 1, 17, and 26, Barrett discloses a method of processing a command requesting information on any intermediate devices in a route from a first system (transmitting node) to a second system (receiving node), said any intermediate

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devices being contained in a network implemented on a broadcast medium, said network containing a plurality of devices including said any intermediate devices (Par. 13-25), said method comprising: receiving said command (Par. 87, Lines 1-3); determining a first device which is connected directly to said first system logically viewing said first device as a present device if said second system is not also directly connected to said first device (Par. 14); sending a request packet (requests are made via SNMP) (Par. 54) to said present device requesting information on whether said second system is connected directly to said present device (Par. 15); receiving a response packet from said present device, wherein said response packet indicates whether said second system is connected directly to said present device (Par. 22), wherein said response packet further identifies a subsequent device in a route to said second system if said second system is not connected directly to said present device, wherein said subsequent device is next to said present device in said route to said second system (Par. 15); and repeating said sending and receiving by using said subsequent device in the place of said present device until said response packet indicates that said second system is directly connected to said present device (Par. 15) (Also see Par. 53-58). Barrett further discloses that layer-2 devices are identified, but fails to disclose the method for identifying them.

Wang et al. (Wang, hereafter) teaches a similar method of determining information on layer-2 devices in a route from a first system to a second system. Both Barrett and Wang disclose that determining information about the layer-2 devices is

advantageous since it can help isolate network problems more precisely (Barrett, Par. 60) (Wang, Col 1, Lines 19-32).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the system disclosed by Barrett to identify layer-2 devices in the network as taught by Wang. This allows a more complete topology of the path to be generated and helps to more precisely determine the location of possible problems in the network.

23. With regard to claims 2, 18, and 27, Barrett further discloses that a receiving device receives said command (Par. 86, Lines 1-3), and wherein said receiving device is not directly connected to said first device, wherein said determining further comprises: locating a directly connected device which is connected directly to said first system (Par. 14 and Par. 16-20); using said directly connected device as said present device (Par. 14); and performing said repeating to determine said route (Par. 15).

24. With regard to claims 3, 19, and 28, Barrett further discloses that said locating comprises: substituting said receiving device as said first device; and performing said repeating to determine said directly connected device (Par. 16-20).

25. With regard to claims 5 and 30, Barrett further discloses that said determining, sending, receiving, and repeating are performed in a receiving device (Par. 86, Lines 1-3)

26. With regard to claims 6 and 31, Wang further discloses providing a command line interface to enable a network administrator to enter said command on said receiving device (Col 5, Lines 28-29) as an alternative to a GUI (Col 6, Lines 14-16).

27. With regard to claims 7 and 32, Barrett further discloses that said second system is deemed to be directly connected to said first layer-2 device if said second system is connected to a port of said first layer-2 device (Each port is checked until a directly connected device is found) (Par. 15).

28. With regard to claims 8 and 33, Barrett further discloses receiving in said receiving device a neighbor packet from a neighbor device on at least one port (CDP enabled devices broadcast identification via packets to neighbors) (Par 63). However, the system disclosed by Barrett in view of Wang fails to specifically disclose concluding in said receiving device that a system communicating on another port is connected directly to said another port by the absence of reception of neighbor packets on said another port.

However, this would be an obvious addition to the system. Barrett discloses that CDP neighbor data will not be transmitted if there are no switches on the segment (Par. 63, Lines 2-5). Since there is no neighbor data, there are no switches, and the system must be directly connected. This would be an easy way to determine if a system is directly connected to a device.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to conclude that a system communicating on a port is directly connected to said port if no neighbor packets have been received on that port. Since no neighbor packets have been received, there are no switches and the system must be directly connected.

29. With regard to claim 9, Barrett further discloses that said network is implemented using Ethernet/802.3 protocol (Par 37, Lines 1-5).

30. With regard to claim 10, Barrett further discloses that said request packet and said response packet are generated consistent with UDP/IP protocol (SNMP uses UDP) (Par. 50, Lines 1-5).

31. With regard to claim 11, Barrett further discloses that said determining, sending, receiving, and repeating are performed in a computer system (Client terminal) (Par. 86, Lines 1-3).

32. With regard to claims 12, 21, and 35, Barrett discloses a method of tracing a route containing a sequence of devices between a first system (transmitting node) and a second system (receiving node), said method being performed in a device forming a part of a network, said method comprising: receiving in said device a request packet (requests are made via SNMP) (Par. 54) containing an identifier for said second system,

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wherein said request packet requests information on whether said second system is connected directly to said device (Par. 14-15); determining in said device whether said device is connected directly to said second system (Par. 15); generating in said device a response packet, wherein said response packet indicated whether said device is connected directly to said second system (Par. 15); and sending from said device said response packet (Par. 15) (Also see Par. 53-58). However, Barrett fails to specifically disclose that the devices are layer-2 devices.

Wang et al. (Wang, hereafter) teaches a similar method of determining information on layer-2 devices in a route from a first system to a second system. Both Barrett and Wang disclose that determining information about the layer-2 devices is advantageous since it can help isolate network problems more precisely (Barrett, Par. 60) (Wang, Col 1, Lines 19-32).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the system disclosed by Barrett to identify layer-2 devices in the network as taught by Wang. This allows a more complete topology of the path to be generated and helps to more precisely determine the location of possible problems in the network.

33. With regard to claims 13,22, and 36, Barrett further discloses that said generating further comprises: identifying in said device a next device, wherein said next device is next to said device in a route from said first system to said second system (Par. 15,

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Lines 1-4); and including data identifying said next device in said response packet (Par. 53-58).

34. With regard to claims 14,23, and 37, Barrett further discloses that said identifying comprises: examining a table (IGMP group table) in said device to determine a port on which said second system communicates (Par. 55); and locating a device connecting on said port, wherein said located device comprises said next device (Directly connected hosts for destination address) (Par. 55).

35. With regard to claims 15,24, and 38, Barrett further discloses that said locating comprises: receiving a neighbor packet from said next device on said port indicating a next device identifier identifying said next device (CDP enabled devices broadcast identification via packets to neighbors) (Par 63); and including said next device identifier in said response packet (Switch data is used when determining next device) (Par. 55).

36. With regard to claims 16 and 25, while the system disclosed by Barrett in view of Wang shows substantial features of the claimed invention (Discussed above), it fails to specifically disclose that said first system is deemed to be connected directly to said device if said first system is present on a port of said device, wherein determining is based on the absence of reception of said neighbor packet on said port.

However, this would be an obvious addition to the system. Barrett discloses that

CDP neighbor data will not be transmitted if there are no switches on the segment (Par. 63, Lines 2-5). Since there is no neighbor data, there are no switches, and the system must be directly connected. This would be an easy way to determine if a system is directly connected to a device.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to conclude that a system communicating on a port is directly connected to said port if no neighbor packets have been received on that port. Since no neighbor packets have been received, there are no switches and the system must be directly connected.

37. With regard to claim 34, the limitations are met by the rejection cited above for claims 9 and 10.

38. With regard to claim 39, Barrett discloses a device for supporting the tracing of a route containing a sequence of devices between a first system (transmitting node) and a second system (receiving node), said device being comprised in a network based on a broadcast medium, said device comprising: an inbound interface receiving a request packet (requests are made via SNMP) (Par. 54) containing an identifier for said second system, wherein said request packet requests information on whether said second system is connected directly to said device (Par. 14-15); a next hop block determining whether said device is connected directly to said second system (Par. 15); a generate request/response block generating a response packet, wherein said response packet

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indicates whether said device is connected directly to said second system (Par. 15); an outbound interface sending said response packet (Par. 15) (Also see Par. 53-58).

However, Barrett fails to specifically disclose that the devices are layer-2 devices.

Wang et al. (Wang, hereafter) teaches a similar method of determining information on layer-2 devices in a route from a first system to a second system. Both Barrett and Wang disclose that determining information about the layer-2 devices is advantageous since it can help isolate network problems more precisely (Barrett, Par. 60) (Wang, Col 1, Lines 19-32).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the system disclosed by Barrett to identify layer-2 devices in the network as taught by Wang. This allows a more complete topology of the path to be generated and helps to more precisely determine the location of possible problems in the network.

39. With regard to claim 40, Barrett further discloses a memory storing a first table and a second table, said first table indicating a port on which each system communicates (neighbor table) (Par. 55), said second table indicating a device connecting to each port (IGMP Group table) (Par. 54); and a port determination block determining a port on which said second system communicates (Par. 55), wherein said next hop block examines said second table to determine said a next device according to the port determined by said port determination block, wherein said next device is

contained in said sequence of devices (Directly connected hosts for destination address) (Par. 55) (Also see Par. 13-15).

40. With regard to claim 41, Barrett further discloses that said next hop block determines that said second system is directly connected to a first port indicated by said first table if no device is associated with said first port in said second table (Router table reads "directly connected") (Par. 52).

41. With regard to claim 42, Barrett further discloses a user interface receiving said a trace command from a network administrator (Browser, Par. 86 or Application, Par 88).

42. With regard to claim 43, Barrett further discloses that wherein said next device is not directly connected to said first system, said device further comprising a control logic to trace a directly connecting device connecting directly to said first system, wherein said route is traced from said directly connecting device using said inbound interface, said outbound interface, said next hop block and said generate request/response block (Directly connected device is found using the trace method) (Par. 16-20).

43. With regard to claim 45, Barrett further discloses a response processor to receive a response packet, wherein said response packet indicates a next device in said route, wherein said generate request/response block generates another request packet directed to said next device, wherein said another request packet requests said next

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device to indicate whether said second system is connected directly to said next device (Each successive node is checked until a directly connected one is found) (Par. 15).

44. Claims 4,20,29, and 44 rejected under 35 U.S.C. 103(a) as being unpatentable over Barrett (2003/0135644) in view of Wang et al. (US 6,538,997) in further view of Murhammer et al.

45. With regard to claims 4,20,29 and 44, while the system disclosed by Barrett shows substantial features of the claimed invention (discussed above), it fails to disclose that said locating comprises sending a multicast packet directed to a plurality of devices, said multicast packet containing an identifier of said source system, wherein each of said plurality of devices is designed to respond indicating if said source system is connected directly to the device

Murhammer et al. teach a method of locating a system by sending a multicast (broadcast is a special type of multicast) packet to a plurality of devices containing an identifier of said first system (system B), wherein each device which is directly connected to the first system (router R responds that it is directly connected) will respond (Page 71, Section 2.4.4.1). This method allows a system or device to determine the location of another system or device by sending a request to all the devices in the network asking if they are connected to the desired system, allowing any device to be easily located.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to determine the location of the first system by sending a multicast packet with the identifier of the first system to a plurality of devices in the network. The devices would respond only if they are directly connected to the first system, allowing the first device to be easily located and begin the trace.

Conclusion

46. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

47. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

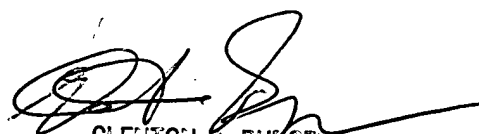
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48. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aaron Strange whose telephone number is 571-272-3959. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glen Burgess can be reached on 571-272-3949. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ANS 12/15/2004


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